

Serial No.: 10/727,861
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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1. (Currently amended) A method of extruding dental material from a capsule-like cartridge, comprising:

providing a capsule-like cartridge having an elongated body, and a nozzle, and a piston,

said elongated body having an inner chamber wall and end wall portion, said elongated body enclosing dental material, and,

said nozzle having a cylindrical nozzle channel with a substantially uniform diameter, an inner channel wall enclosing said nozzle channel, and a channel wall exit orifice rim, said nozzle extending from said end wall portion of said elongated body,

said inner chamber wall having a chamber wall exit port rim, said chamber wall exit port rim having an opening and being connected to said inner chamber wall of said elongated body and said inner channel wall of said nozzle, said chamber wall exit port rim having a chamber wall exit port rim effective diameter D_1 , said ~~inner channel wall~~ nozzle channel having an ~~inner channel wall~~ effective diameter D_2 , said ~~inner channel wall~~ nozzle channel effective diameter D_2 effectively being greater than said chamber wall exit port rim effective diameter D_1 , said end wall portion of said elongated body having a hemispherical exterior surface and an arcing interior surface, said end body wall portion having substantially greater thickness than said inner chamber wall of said elongated body —, and

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said piston being inserted into said elongated body, wherein said piston has a side wall and semi-circular front-facing portion, said side wall being complementary to said inner chamber wall of said elongated body and said front-facing portion having a complementary shape to said interior surface of said end wall portion of said elongated body --, and

applying force to said piston to extrude said dental material through said nozzle of said cartridge.

Claim 2. (Original) The method of claim 1 wherein said capsule-like cartridge further comprises a cap, said cap being supported by said nozzle.

Claim 3. (Original) The method of claim 2 wherein said nozzle extends from said body and said cap closes an outer end of said nozzle to seal the contents of the cartridge against ingress of any surrounding contaminating matter.

Claim 4. (Original) The method of claim 2 wherein said cap is color-coded to indicate desired properties of the contents of the cartridge.

Claim 5. (Currently amended) The method of claim 1 wherein said ~~capsule-like-cartridge further comprises a piston, and~~ said piston and said body are formed from plastic material, said plastic material being impervious to the transmission of ambient light, thereby rendering the cartridge adapted to contain light-curable material in a manner to prevent premature curing of such material while stored in such cartridge.

Claim 6. (Original) The method of claim 1 wherein said ~~inner-chamber~~ wall nozzle channel effective diameter D_1 is at least 5 percent greater than said chamber wall exit port rim effective diameter D_2 .

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Claim 7. (Original) The method of claim 1 wherein said ~~inner-channel~~
wall nozzle channel effective diameter D_2 is at least 10 percent
greater than said chamber wall exit port rim effective diameter D_1 .

Claim 8. (Original) The method of claim 1 wherein said ~~inner-channel~~
wall nozzle channel effective diameter D_2 is at least 20 percent
greater than said chamber wall exit port rim effective diameter D_1 .

Claim 9. (Original) The method of claim 1 wherein said ~~inner-channel~~
wall nozzle channel effective diameter D_2 is at least 3 percent greater
than said chamber wall exit port rim effective diameter D_1 .

Claim 10. (Original) The method of claim 1 wherein said inner chamber
wall has an inner chamber wall effective diameter D_1 , and said inner
chamber wall effective diameter D_3 is greater than said ~~inner-channel~~
wall nozzle channel effective diameter D_2 .

Claim 11. (Currently amended) A capsule-like cartridge, adapted to be
operated solely by being mounted upon an ejector-type holder, said
cartridge comprising:

an elongated body, said body being molded from rigid plastic
material and having a cylindrical body wall, said cylindrical body
wall having a cylindrical inner body wall, a predetermined length,
uniform interior diameter, a uniform exterior diameter and a central
axis, one end of said cylindrical body wall being open and formed at
the extremity thereof with an annular relatively short circular
exterior flange, said flange being adapted to be detachably mounted
within a complementary seat in an ejector type holder, the opposite
end of said body being closed by an end wall having a hemispherical
exterior surface and an arcing interior surface, said end wall having
substantially greater thickness than said cylindrical body wall,

a nozzle molded integrally with and extending from said end wall
at an obtuse angle to said central axis of said cylindrical body wall

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to direct discharge from said cartridge to the interior of an oral cavity, said nozzle having a cylindrical nozzle channel with a substantially uniform diameter, an effectively cylindrical inner nozzle wall enclosing said nozzle channel, said nozzle having a nozzle entrance passage, through said end wall to the nozzle,

~~said nozzle having an inner channel wall~~, and a channel wall exit orifice rim,

said cylindrical inner body wall of said elongated body having a chamber wall exit port rim, opening between said inner chamber wall and said inner channel nozzle wall, said chamber wall exit port rim having a chamber wall exit port rim effective diameter D_1 , said ~~inner channel wall~~ nozzle channel having an ~~inner channel wall~~ effective diameter D_2 , said ~~inner channel wall~~ nozzle channel effective diameter D_2 effectively being greater than said chamber wall exit port rim effective diameter D_1 , and

a piston having a side wall and a semi-circular front facing portion, said side wall being closely complementary to said cylindrical inner body wall and inserted into the open end thereof and said front facing portion having a complementary shape to said interior surface of said end wall of said elongated body.

Claim 12. (Original) The cartridge of claim 11 further comprising a cap, said cap being supported by said nozzle.

Claim 13. (Original) The cartridge of claim 12 wherein said nozzle extends from said body and said cap closes an outer end of said nozzle to seal the contents of the cartridge against ingress of any surrounding contaminating matter.

Claim 14. (Original) The cartridge of claim 12 wherein said cap is color-coded to indicate desired properties of the contents of the cartridge.

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Claim 15. (Original) The cartridge of claim 11 further characterized by said body and piston being formed from plastic material suitably colored to render the same impervious to the transmission of ambient light, thereby rendering the cartridge adapted to contain light-curable material in a manner to prevent premature curing of such material while stored in such cartridge.

Claim 16. (Original) The cartridge of claim 11 wherein said ~~inner~~ ~~channel-wall~~ nozzle channel effective diameter D_2 is at least 5 percent greater than said chamber wall exit port rim effective diameter D_1 .

Claim 17. (Original) The cartridge of claim 11 wherein said ~~inner~~ ~~channel-wall~~ nozzle channel effective diameter D_2 is at least 10 percent greater than said chamber wall exit port rim effective diameter D_1 .

Claim 18. (Original) The cartridge of claim 11 wherein said ~~inner~~ ~~channel-wall~~ nozzle channel effective diameter D_2 is at least 20 percent greater than said chamber wall exit port rim effective diameter D_1 .

Claim 19. (Original) The cartridge of claim 11 wherein said nozzle entrance passage has a length and said length of said nozzle entrance passage is less than 20 percent of the diameter of said entrance port.

Claim 20. (Original) The cartridge of claim 11 wherein said nozzle entrance passage has a length and said length of said nozzle entrance passage is more than .3 percent of the diameter of said entrance port.

Claim 21. (Original) The cartridge of claim 11 wherein said inner chamber wall has an inner chamber wall effective diameter D_3 , and said inner chamber wall effective diameter D_3 is greater than said ~~inner~~ ~~channel-wall~~ nozzle channel effective diameter D_2 .

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Claim 22. (Original) The cartridge of claim 11 wherein said nozzle has a bead circumscribing said nozzle.

Claim 23. (Canceled).

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